

ORGANO-THERAPY IN OBSTETRICAL AND GYNAECOLOGICAL PRACTICE

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THE part assigned me to-night is to initiate the discussion on the therapeutic application of animal extracts in obstetrical and gynæcological practice. In the fifteen minutes at my disposal it is impossible to cover such a large subject, so I shall limit myself to a general survey and leave the details to be filled in by those who follow on in the discussion.

Whilst there has been a great deal of work done in recent years on the relationships between the various ductless glands and the female genital organs, the whole subject is still in a state of confusion, and it must remain so until the inter-action of those various secretions is more fully understood. This knowledge can only come from careful experiment and the co-relation of closely observed clinical phenomena and post mortem findings.

It may be fairly stated that the only animal extract which can be depended upon to produce definite effects on the female genital organs is that derived from the posterior lobe of the pituitary body. The use of one or other of the various pituitary preparations for the strengthening of labour pains has become so general and the literature on it so extensive that I do not intend to say much regarding it now. I shall content myself by giving the conclusions from a paper recently read by me before the Canadian Medical Association.

1. Pituitary extracts have a powerful effect in inducing and in strengthening uterine contractions.

2. The type of contractions induced is similar to that which occur normally, although at first there may be a tendency to prolongation of the pains.

3. Such prolonged contractions result in slowing of the foetal heart, but the child is seldom in danger.

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4. When given in the late part of the first and in the second stage of full time labour the polarity of the uterine contractions is not interfered with, but in early abortions and early in the first stage a simultaneous spasm of the os may occur.

5. Its chief field of usefulness is at the end of the first and in the second stage of labour, when there is delay due to feebleness of the pains, alone or when combined with other complications, such as malpositions of head, malpresentations, multiple pregnancy, slight narrowing of the pelvis, etc.

6. In the induction of abortion, in the treatment of abortion already in progress, and in incomplete abortion, its action is so uncertain that it is not to be recommended except in cases where the os is widely dilated.

7. In the induction of premature labour its effects are uncertain, but if sufficient dosage be given they may be good.

8. In the induction of labour at full term and after, better results are obtained than in premature cases.

9. It gives good results in many cases of post-partum hæmorrhage, but is not superior to the various preparations of ergot. It has the power of sensitizing the uterus, so as to allow these preparations to act more powerfully, the combination being most effective.

10. It is a useful adjunct in the treatment of placenta prævia, used in conjunction with rupture of the membranes, the use of hydrostatic dilators, or turning.

The results obtained from pituitary extracts are so definite and follow so quickly upon their exhibition that they resemble those obtained from drugs. With the possible exception of thyroid extract no other animal product has such definite therapeutic properties.

Little success has attended the employment of other animal extracts in obstetrical and gynæcological practice. The various extracts employed may be given for one of two purposes.

(a) To stimulate the genital functions when they are in abeyance or sub-normal.

(b) To restrain hyperactivity when there is hyperfunction.

Whilst the ovaries are the organs immediately concerned with the growth and nutrition of the genital organs and with their functional activity, other organs also play a very considerable part. There is a close relationship between all the ductless glands, the secretion of one being antagonistic to that of others or helping out their action. These ductless glands can be grouped according to the effect that their secretion is known or supposed to produce

upon the development, growth, and function of the female genital organs.

THE OVARIES. These are essential for the development, growth, and function of the whole genital apparatus, and also for the secondary sexual characters of the individual. The ovary possesses this property by virtue of internal secretions which it produces. What the exact nature of those secretions is we do not know, nor do we know absolutely where they are produced. There are three possible sources:

1. The follicular apparatus
2. The interstitial cells of the stroma
3. The corpus luteum.

The secretion produced by the interstitial cells or follicular apparatus or both, is probably responsible for the development of the sexual organs between birth and puberty and for the development of the secondary sexual characters, as we know that removal of the ovaries at an early age results in nondevelopment of the genital apparatus and in the production of a neuter type.

The corpus luteum, now regarded as a derivative of the follicular epithelium although by some looked upon as arising from the interstitial cells, is responsible for the maintenance of the cyclical changes resulting in menstruation and probably for the development of the decidua and the nidation of the ovum.

The other ductless glands also exert a varying influence on the genital apparatus either directly or through the ovaries. Thus we know that excessive development of the adrenal produces precocious sexual development, whilst this also results from early atrophy of the thymus gland or destruction of the pineal body. Hyperplasia of the thymus causes arrest of the development of the genital organs. Deficiency of thyroid secretion results in hypofunction as amenorrhoea and sterility. Deficient function of the anterior lobe of the pituitary produces similar results usually accompanied by marked adiposity.

Conversely the ovarian secretion exerts an influence on the other ductless glands. Castration causes hypertrophy of the pineal gland, the anterior lobe of the pituitary and the adrenal cortex, while the thymus may fail to atrophy.

We can thus see that disturbance in any one of the various organs of internal secretions may have pronounced effects on the genital apparatus resulting in disordered function. In the present state of our knowledge it is often extremely difficult to locate the part of the chain where the break is and much of our organo-

therapy is consequently more or less haphazard, and the results very varying. We have only to glance at the literature and note the adversity of opinion regarding the efficacy of the various extracts to realize that we are still groping in the dark in this particular subject.

For our present purpose I think the best we can do is to discuss shortly the conditions which are likely to be benefited through treatment with one or other of the animal extracts. These conditions are infantilism, amenorrhœa, dysmenorrhœa, sterility, repeated abortion, hyperemesis, toxæmia of pregnancy, menopausal symptoms (natural or artificial), pruritus vulvæ, deficient mammary secretion.

*Infantilism and general underdevelopment of genital organs
with absolute or relative amenorrhœa.*

Administration of ovarian or lutein extracts sometimes do good in these conditions but the results are by no means uniform. If underdevelopment is marked we would expect to get the best results from ovarian extract and if development were good from corpus luteum extract. It may be said here that there is a great variety of ovarian preparations on the market. Most of them are made from sows' ovaries, but some from cows'. There must be a very considerable variation in the action of those extracts according to the time at which the animals are killed. The corpus luteum of the pregnant animal is probably of greater therapeutic value than that of the nonpregnant (Dannreuther). It may be given as a dessicated substance or as an extract, by mouth or subcutaneously. The dose should be at least 5 grs. of the dessicated substance thrice daily (Dannreuther). Recently some lipid substances have been extracted which show considerable toxicity when given intravenously. They cause a marked fall in blood pressure and muscular paralysis. If a genital reaction occurs there is flushing of the external organs and menstruation may be established in a few days. In other cases very prolonged treatment may be required and in some no result at all will be obtained.

In such cases of failure especially if the amenorrhœa is acquired and associated with adiposity it is well to try a pituitary extract—from the anterior lobe and that failing to go on to thyroid. The order may of course be reversed. In many cases no response will be obtained to any of these.

In sterility and abortion not due to local or constitutional causes, some successful results have been obtained by lutein therapy.

Similar good results have followed its administration in cases of the hyperemesis of pregnancy. In such, benefit may be obtained by administration of adrenalin in large doses—10 to 20 m. of 1 in 1000 solution thrice daily. In the toxæmia of pregnancy good results have been reported from the administration of ovarian extracts. Similar results have followed large doses of thyroid extracts—notably in the hands of Nicholson, who believes that many of those cases are due to thyroid inadequacy.

One or two observers have reported good results from ovarian and lutein extracts in cases of pruritus and kraurosis vulvæ. The effect of the extract seems to be the vascularization and slackening up of the tissues affected, with immediate amelioration of the symptoms. In some cases of pruritus at or after the menopause it acts almost like a specific.

In the so-called genito-suprarenal syndrome ovarian extract may relieve to a certain extent.

The symptoms of the menopause either artificial or natural may or may not be relieved by ovarian extract. There are many reports in the literature of good results, and perhaps as many where no improvement was observed.

It must be said of ovarian and lutein extracts in all the foregoing conditions that there is no certainty in their action. Generally if benefit is to follow it will appear in a few days. If it doesn't the dose ought to be increased—there is no danger of toxic symptoms if it is given by mouth. One case is reported where as many as 2500 5 gr. tablets were taken. If, however, the blood pressure falls below 90 mm. it ought to be discontinued.

So far as my own experience goes I have only rarely found any decided benefit from animal extracts in any of the conditions named. Where benefit has followed it has generally been after the administration of thyroid substance in cases of amenorrhœa associated with obesity. In the natural and artificial menopause I have got better results from general tonic treatment than from organo-therapy, although in severe cases I always try the latter.

In the toxæmias of pregnancy I generally rely on other means of treatment, although I have seen good results from large doses of thyroid in threatened eclampsia where the patients showed absence of the normal thyroid hypertrophy of pregnancy. I have also had good results in cases of pernicious vomiting from adrenalin, but other forms of treatment have been used at the same time so that it is impossible to say definitely to which the improvement was due.

Various extracts have been tried from time to time, both experimentally and clinically, to influence the mammary secretion. Schickele found that injections of extract of corpus luteum, ovary, placenta, testicle or pituitary failed to produce any mammary enlargement in either castrated or entire animals. Ott on the other hand demonstrated increased milk secretion after injection of ovarian, placental and foetal extracts. I have used pituitrin as a galactagogue in women who had deficiency of milk with apparently good results.

Ascher has shown experimentally that placental extract causes ovarian hyperæmia and uterine congestion and hæmorrhage, and suggests that placental extract might be useful in the treatment of amenorrhœa and sterility.

To sum up the whole matter it may be said that organo-therapy as applied to obstetrics and gynæcology is yet in its infancy, and much more knowledge regarding the inter-relationships of the various ductless glands is required before it can be used rationally; that meantime we should observe carefully all cases in which we employ it and note the results, varying if necessary the substance employed. Only by the clinician working in conjunction with the experimental investigator can we hope to gain further knowledge.